WHAT IS CLAIMED IS:

1. A method of treating diabetes in a mammal in need thereof, comprising the steps of:

implanting in said mammal a tolerizing dose of insulin-secreting cells from the same species as said mammal encapsulated in a biologically compatible permselective membrane; then

administering to said mammal a curative dose of corresponding unencapsulated insulin-secreting cells.

2. The method of claim 1, wherein said mammal is a human, canine or feline.

3. The method of claim 1, wherein said tolerizing dose is one to two orders of magnitude less than said curative dose.

4. The method of claim 1, wherein said insulin-secreting cells are pancreatic islet cells.

5. The method of claim 1, wherein said membrane comprises polyethylene glycol.

6. The method of claim 1, wherein said tolerizing and curative doses are porcine.

7. The method of claim 1, further comprising the step of administering one or more anti-inflammatory agents to said mammal prior to, at the same time as, or subsequent to administration of said curative dose.

8. The method of claim 1, wherein said membrane has a molecular weight cutoff of about 150 kDa or less.

9. The method of claim 1, wherein said membrane has a pore size of less than about 0.4 μm.

10. The method of Claim 9, wherein said membrane has a pore size of less than about 0.2 μm.

11. The method of Claim 1, wherein said curative dose is between one and two orders of magniture higher that said tolerizing dose.

12. The method of Claim 1, wherein said implanting step is subcapsular, subcutaneous, intraperitoneal or intraportal.

13. The method of Claim 1, wherein said administering step is intraperitoneal, intraportal or subcutaneous.

14. The method of Claim 1, wherein said tolerizing dose is administered incrementally.